

Remarks

In the present response, claim 21 is amended to correct a typographical error. Claims 1-19 are withdrawn, and claims 20-30 are presented for examination.

I. Claim Rejections: 35 USC § 103

Claims 20-30 are rejected under 35 USC § 103(a) as being unpatentable over USPN 6,546,163 (Thackara) or over USPN 5,488,681 (Deacon). This rejection is traversed.

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art cited must teach or suggest all the claim limitations. *See* M.P.E.P. § 2143. For at least the following reasons, Applicant asserts that the rejection does not satisfy these criteria.

Thackara

Independent claim 20 recites numerous recitations that are not taught or suggested in Thackara. By way of example, claim 20 recites a first planar layer with m optical path(s) and a second planar layer with n optical path(s). In other words, the claim recites **two different planar layers**. By contrast, Thackara only teaches a single planar layer. For instance, the Summary section of Thackara discusses an optical switch formed “within a planar waveguide” or an optical cross-connect formed “within a planar waveguide” (emphasis added; see 1: 65-66 and 2: 53-55). Further, FIG. 1 in Thackara shows “a” planar waveguide having a single substrate 11. Thus, Thackara does not teach or suggest an apparatus comprising both a first planar layer with optical paths and a second planar layer with optical paths.

For at least these reasons, claim 20 and its dependent claims are allowable over Thackara.

As yet another example, independent claim 20 recites an optical switch that couples “any optical path of the first planar layer with any optical path of the second

planar layer.” Thackara teaches a single planar layer that has an $N \times N$ array of switch elements (see example FIG. 4). Thackara, however, does not teach or suggest that the switch elements couple a path between two different planar layers, namely a first planar layer and a second planar layer.

For at least these reasons, claim 20 and its dependent claims are allowable over Thackara.

Deacon

Independent claim 20 recites numerous recitations that are not taught or suggested in Deacon. By way of example, claim 20 recites a first planar layer with m optical path(s) and a second planar layer with n optical path(s). In other words, the claim recites **two different planar layers**. By contrast, Deacon only teaches a single planar layer. Nowhere does Deacon teach or suggest the recited first and second planar layers.

The Examiner cites column 80 of Deacon. This section of Deacon is directed to claims for electrically controlling frequency-selective beam coupling in a device. Applicant respectfully argues that this section of Deacon has nothing whatsoever to do with the recitations in claim 20. If the Examiner maintains this rejection in a subsequent Office Action, Applicant respectfully asks the Examiner for clarification: What elements in column 80 of Deacon correspond with (1) the first planar layer, (2) m optical paths, (3) the second planar layer, and (4) n optical paths?

For at least these reasons, claim 20 and its dependent claims are allowable over Deacon.

As yet another example, independent claim 20 recites an optical switch that couples “any optical path of the first planar layer with any optical path of the second planar layer.” Nowhere does Deacon teach or even suggest an apparatus that has an optical switch that couples a path in a first planar layer with a second planar layer. Applicant respectfully argues that this section of Deacon has nothing whatsoever to do with the recitations in claim 20. If the Examiner maintains this rejection in a subsequent Office Action, Applicant respectfully asks the Examiner for clarification: What elements in column 80 of Deacon correspond with (1) the first planar layer, (2) the second planar layer, (3) the optical switches, and (4) the optical paths?

For at least these reasons, claim 20 and its dependent claims are allowable over Deacon.

CONCLUSION

In view of the above, Applicant believes that all pending claims are in condition for allowance. Allowance of these claims is respectfully requested.

Any inquiry regarding this Amendment and Response should be directed to Philip S. Lyren at Telephone No. 832-236-5529. In addition, all correspondence should continue to be directed to the following address:

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Respectfully submitted,

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